

Stunting Prevention Behaviors Based on Family Centered Nursing with Lokal Value in Pesawaran Regency

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ABSTRACT

Stunting is toddler's failure to thrive condition because of chronic malnutrition. This kind of chronic malnutrition is caused by recurrent infection and insufficient parenting, which occurs during the first 1,000 days of life over long period. This research aims to assess the family empowerment's influence based on Family Centered Nursing with local value towards family's behavior of stunting risk, includes the knowledge, attitudes, preventing action of stunting in Pesawaran Regency. It was the quantitative research with quasi-experimental design complete with intervention and control group which each of group consisted of 42 family who risk of stunting in Pesawaran Regency with purposive sampling technique. Intervention group received health education by using module based on local value with intensive mentoring, while the control group without the mentoring and analysis data carried out by using Paired test, Wilcoxon test, and Mann-Whitney test. It was found that the intervention based on Family Centered Nursing with local value gave significance effect on increasing all of studied variable. In the intervention group, there was a significance increase for the knowledge [$\Delta=2.62$], attitude [$\Delta=3.98$], action [$\Delta=4.14$]. Mann-Whitney value was 269,500 with a Z value was -5,636 and the significant between knowledge, attitude, and action after the treatment was 0,000. Based on the result of the research it was found that the significance difference statistically on the knowledge, attitudes, and actions between control and intervention group based on Mann-Whitney test [$p < 0,05$]. Intervention group showed better improvement in all three-measured aspects. Intervention program that have been proven effective should.

Keywords: Stunting, Prevention, Attitude, Action, Local Value, Family Centered Nursing.

INTRODUCTION

Stunting is the toddler's failure to thrive condition because of chronic malnutrition, especially during the first 1,000 days of life which is triggered by recurrent infection and insufficient parenting patterns [1,2]. This case also occurs in the children worldwide due to the long-term of micro and macro nutritional deficiencies [3]. Based on WHO data (2024), in 2022 approximately 22,3% or 148 million children under 5 years old suffering from stunting with a prevalence in Southeast Asia is 22,4%. In Indonesia, the stunting rate decreased from 24,4% in 2021 becomes 21,6% in 2022, but in several provinces still have high prevalence, such as East Nusa Tenggara (35,3%),

West Sulawesi (35%), and Papua (34,6%). In Lampung province, the prevalence of stunting among toddler was 15,2% in 2022, with Pesawaran Regency the highest reached 25,1%. The stunting rate in Lampung decreased become 14,9%, in 2023, although some regencies such as West Lampung and Waykanan still recorded prevalence rates above 20%[4].

Stunting occurs due to many interrelated factors, including providing the sensitive food especially for children can prevent a decline in Children's nutritional status and growth retardation [5]. This is one of many other causes of stunting [6]. Suboptimal parenting patterns, which can cause an increase of stunting prevalence [7]. Based on Nkurunziza research (2017), mothers' educational level, their knowledge about assessing nutritional status and children health, the provision of facilities are predictors of stunting on children. The health sector's relationship with Community Health Center and mother's knowledge about nutrition can cause the stunting[8]. The behavior in fulfilling nutritional needs determines children health status therefore; it is needed parents' role and knowledge to prevent the stunting [9].

It indicates the need of sustainable nutritional intervention to decrease the stunting in toddlers. Besides that to prevent stunting the behavior changes are needed, based on health *belief model* theory is a theory of health behavior change and *Family Centered Nursing* is a nursing theory with nursing care with a nursing process approach with health of education nursing system, , *coaching dan peer- education* [10,11]. Juniarti's research (2020) found that the external factor has significance influence to family empowerment in stunting prevention efforts carried out by families [12], and it was also found in Julia's research (2023) family empowerment can increase family's independence in preventing stunting to children under 5 years old in both of intervention and control group with p-value < 0.001(13). Likewise Sari's research (2018) in Pesawaran Regency, Lampung, it was found that parents who have unsupportive parenting patterns will increase the incidence of toddlers stunting by 12,1 times compared to parents with supportive parenting patterns 14].

Based on mentioned above, this research is very important to be conducted as an initial step in stunting prevention by developing a stunting prevention model based on *Family Center Nursing* with local value in Pesawaran Regency. It is caused the prevalence of stunting is still high in Pesawaran regency area which one of areas in Lampung Province and it can help to improve the quality of local value, such as increasing the understanding of nutrition, the health workers' support, good parenting and feeding patterns as well as good access and sanitation in preventing stunting. By developing a stunting prevention model of *Family Center Nursing Bases* with local value in Pesawaran Regency can be effective strategy to prevent stunting. This research aims to assess the effect of family empowerment based on *Family Center Nursing* with local value towards the behavior changing of families at risk on stunting in Pesawaran Regency.

METHOD

Data dianalisis secara univariat, bivariat, dan multivariat menggunakan program SPSS. Analisis dilakukan menggunakan uji Paired, uji Wilcoxonuji, dan Mann-Whitney. This research used Quantitative with Quasi-experimental approach. Each intervention and control group consisted of 42 families who risk of stunting in Pesawaran Regency. The sampling techniques used purposive sampling. Intervention group received health education by using module based on local value with intensive mentoring, while the control group without the mentoring. Data were collected through questionnaires that measure knowledge, attitudes, and action before and after the intervention. Data were analyzed univariate, bivariate and multivariate using SPSS program. Analysis carried out by using Paired test, Wilcoxon test, and Mann-Whitney test.

THE RESULT

Univariate Analysis

Based on table 1 below, it shows that this research involves two groups of respondents, namely intervention and control group each of them consisting 42 people so the total respondents are 84. Based on husband's age, the distribution of respondent showed that the largest age range was >35 years age group with 61 respondent covering 72,6% of total respondents, with 26 respondent representing 61,9 % from intervention group and 20 respondent representing 35% of the control group. The age group with the least representation of husband was the <20 years age group with 1 person 1,2 %, with only 1 respondent from intervention group. In terms of husbands' education, most of them had completed Senior High School level or equivalent with 48,8%, followed by College Education at 27,4%. There were only 2 respondents in control group who did not complete their Elementary School level. Husband's occupation were varied, but dominated by Farmers comprising 35,7% of all respondents, with a higher proportion in the intervention group (42,9%) than in the control group ((28,6%). Other occupations, such as Teachers, Civil Servant, Private Employee, Laborers, and Unemployed were smaller in this distribution. The age

of distribution wives respondents showed that the most ranges age group was 31-35 years as many as 48,8% with 28 respondents. Control respondents as many as 66,7% and for the intervention respondents were 20 with the age characteristic >20 years. 47.6%. education with the number of respondent were 51 person 60,7%. The highest wives' education were Senior High School level or equivalent as many as 60,7%, in the control group as many as 29 respondents 69,0% and for the intervention group as many as 22 respondents 52.4%. Most of the wives' occupation were housewives with 43 respondents 51.2% and control group as many as 25 respondents 59.5% and Intervention group as many as 18 respondents 42,9%. Most of the family income was <UMR with 52 respondent 61,9% and the number of control group as many as 66,7, the intervention group as many as 24 respondent 57,1%.

Table 1. The Distribution of Respondents' Characteristic in the Intervention and Control Group in Pesawaran Regency in 2025.

Characteristic	Group				The Total	
	Intervention		Control			
	n (42)	%	n (42)	%	n (84)	%
Husbands' Age Group (Years)						
<20 years	1	2.4	0	0	1	1.2
21-30 years	4	9.5	1	2.4	5	6.0
31-35 years	11	26.2	6	14.3	17	20.2
>35 years	26	61.9	35	83.3	61	72.6
Jumlah	42	100	42	100	84	100,0
Wives' Age Group (Years)						
<20 years	3	7.1	1	2.4	4	4.8
21-30 years	6	14.3	11	26.2	17	20.2
31-35 years	13	31.0	28	66.7	41	48.8
>35 years	20	47.6	2	4.8	22	26.2
Total	42	100	42	100	84	100,0
Wives' Education						
Elementari School	2	4.8	0	0	2	2.4
Junior High School/ Equivalent	7	16.7	5	11.9	12	14.3
Senior High School / Equivalent	22	52.4	29	69.0	51	60.7
College	11	26.2	8	19.0	19	22.6
Total	42	100	42	100	84	100,0
Husbands' Education						
Elementari School	4	9.5	2	4.8	6	7.1
Junior High School/ Equivalent	8	19.0	6	14.3	14	16.7
Senior High School / Equivalent	17	40.5	24	57.1	41	48.8
College	13	31.0	10	23.8	23	27.4
Total	42	100	42	100	84	100,0
Husbands' Occupation						
Unemployed	0	0	3	7.1	3	3.6
Private Employee	8	19.0	12	28.6	20	23.8
Civil Servant	9	21.4	6	14.3	15	17.9
Farmer	18	42.9	12	28.6	30	35.7
Entrepreneur	3	7.1	4	9.5	7	8.3
Laborers	4	9.5	5	11.9	9	10.7
Honorary	0	0	0	0	0	0
Total	42	100	42	100	84	100,0
Wives' Occupation						
Unemployed	18	42.9	25	59.5	43	51.2
Private Employee	6	14.3	9	21.4	15	17.9
Civil Servant	7	16.7	6	14.3	13	15.5
Farmer	5	11.9	1	2.4	6	7.1
Entrepreneur	5	11.9	0	0	5	6.0
Laborers	1	2.4	1	2.4	2	2.4
Honorary	0	0	0	0	0	0
Total	42	100	42	100	84	100
Family Income						
<UMR	24	57.1	28	66.7	52	61.9
>UMR	18	42.9	14	33.3	32	38.1
Total	42	100	42	100	84	100,0

Source: Primer Data, 2025.

Bivariate Analysis

Bivariate analysis was conducted to assess the difference of each research variable on both of group before and after intervention in the treatment group

1. The Effect of Local value Based Stunting Prevention Behavior towards Knowledge Changes on the Families at Risk of Stunting

Table 2. The Effect of Local value Based Stunting Prevention Behavior towards Knowledge Changes on the Families at Risk of Stunting in Pesawaran Regency 2025.

Knowledge	Pre	Post 1	<i>p</i> *	$\Delta 1$
Intervention (n=42)	8.38±1.873	11.00±1.951	(0.000)	↑2.62±1.999
Control (n=42)	7.74±2.165	8.07±2.017	(0.000)	↑.33±1.097
<i>P Value</i> **				0.000

$\Delta 1$ = Pre-Post Difference*Paired test; ** Wilcoxon test

Source: Primer Data, 2025.

Table 2 shows that the highest average knowledge score during the pre- test on intervention group at 8.38. Similarly during the post-test, the highest average score remained in the intervention group, at 11.0. Based on the result of Paired test, both of intervention and control group showed a significant difference between nutrition knowledge score at pre and post ($p < 0.05$). Furthermore, there was an increase in knowledge score from pre to post test for each of group, with the highest increase in the intervention group was 2.62.

2. The Effect of Local value Based Stunting Prevention Behavior towards Attitude Changes on the Families at Risk of Stunting

Table 3. The Effect of Local value Based Stunting Prevention Behavior towards Attitude Changes on the Families at Risk of Stunting in Pesawaran Regency 2025.

Attitude	Pre	Post	<i>p</i> *	$\Delta 1$
Intervention (n=42)	6.69±.897	10.67±1.356	(0.000)	↑3.98±1.490
Control (n=42)	6.05±1.011	6.07±1.068	(0.000)	↑.02±1.024
<i>P Value</i> **				0.000

$\Delta 1$ = Pre-Post Difference*Paired test; ** Wilcoxon test

Source: Primer Data, 2025;

Table 3 shows that the highest average attitude score during the pre- test was in the intervention group at 6.69. Similarly, during the post- test, the highest average score remained in the intervention group there was 10.67. Based on the result of paired test, both of intervention and control group showed a significant difference between attitude score at pre and posttest ($p < 0.05$). Furthermore, there was an increase of attitude score from pre to post for each of group, with the highest increase in the intervention group was 3.98

3. The Effect of Local value Based Stunting Prevention Behavior towards Action Changes on the Families at Risk of Stunting

Table 4. The Effect of Local value Based Stunting Prevention Behavior towards Action Changes on the Families at Risk of Stunting in Pesawaran Regency 2025.

Action	Pre	Post 1	<i>p</i> *	$\Delta 1$
Intervention (n=42)	6.33±.979	10.48±1.110	(0.000)	↑4.14±1.555
Controll (n=42)	6.02±1.388	6.40±1.578	(0.000)	↑.38±1.306
<i>P Value</i> **				0.000

$\Delta 1$ = Pre-Post Difference*Paired test; ** Wilcoxon test

Source: Primer Data, 2025;

Table 4 shows that the highest average action score during the pre- test was in the intervention group at 10.48. Based on the result of paired test, both of intervention and control group showed a significant difference between action score at pre and post test 1 ($p < 0.05$). Furthermore, there was an increase of action score from pre to post for each of group, with the highest increase in the intervention group was 4.14. Based on the result of Wilcoxon test, the difference of score between intervention and control group was declared significant ($p < 0.05$).

4. Comparative Analysis of Intervention Group Based on Family Center Nursing

Table 5. Comparative Analysis of Intervention and Control on Knowledge, Attitude and Control towards Stunting Prevention Based on Family Centered Nursing with Local Value.

The Difference between Intervention and Control with Knowledge, Attitude and Action				
	Group	N	Mean Rank	Sum of Ranks
Knowledge Gap	Control	42	27.92	1172.50
	Intervention	42	57.08	2397.50
	Total	84		
Attitude Gap	Control	42	22.18	931.50
	Intervention	42	62.82	2638.50
	Total	84		
Action Gap	Control	42	23.40	983.00
	Intervention	42	61.60	2587.00
	Total	84		
Statistics ^a Test				
	Knowledge Gap	Attitude Gap	Action Gap	
Mann-Whitney U	269.500	28.500	80.000	
Z	-5.636	-7.734	-7.287	
Asymp. Sig. (2-tailed)	.000	.000	.000	

Note: a. Grouping Variable: Group

Source: Primer Data, 2025; * Mann-Whitney U.

Table 5 shows that there is a change in knowledge, attitude and action between control and intervention group. Statistical Analysis using the Mann-Whitney U produced several findings, such as; The intervention group had a higher average knowledge rate (57,08) than the control group (27,92). The Mann-Whitney U value was 269,500 with Z score -5,636 and asymptotic significance (2-tailed) at 0,000. These results showed that there was a significant difference between those two groups in knowledge changes after the treatment. In terms of attitude, the intervention group was also higher (mean rank: 62,82) than the control group (22,18). The Mann-Whitney U test produced U level at 28,500, Z value -7,734, and the significance value was 0,000. It indicates a very significant difference on attitude changes between those two groups. The participants' action in the intervention group (mean rank: 61,60) was higher than those in the control group (23,40). The U value was 80,000, the Z value was -7,287, and the significance was 0,000, indicated that there was a significant difference between control and intervention group. There were highly statistically significant difference of changes in knowledge, attitudes and actions between control and intervention group based on the Mann-Whitney U test ($p < 0,05$). The intervention group showed that there was a greater improvement on those three measured aspects.

DISCUSSION

The Effect of Local value Based Stunting Prevention Behavior towards Knowledge Changes on the Families at Risk of Stunting

Stunting, as a reflection of chronic growth failure due to malnutrition and recurrent infections, remains a crucial public health challenge in Indonesia (9,15). Various health and nutrition-based interventions have been implemented, but these efforts often encounter by complex cultural, social, and economic barriers [16]. In this research, the family knowledge, especially mothers, is admitted as a critical foundation that precedes and mediates positive behavior changes in stunting prevention. Knowledge is not a simply as the information acquisition, but it is the ability to process, understand, and apply that information in the daily life context to take the correct decisions regarding nutrition, sanitation, and parenting [17,18].

The families at risk of stunting may not fully understand the importance of providing nutritious food, how to maintain a healthy eating pattern and good parenting for their children and mothers who are still in the process of exclusive breastfeeding [19]. However, through Family center nursing approach with this local value, they gain a better understanding of preventive steps that can be taken. The cause of stunting is not only children who lack of nutrition, but also low level of education, knowledge and behavior of children's parents [20]. Therefore, the researchers provided education in the form of modules that aim to increase their knowledge in preventing stunting. Not only the knowledge related to stunting prevention, but also the existence of social, cultural, family support and certainly the knowledge that can influence the behavior nutritional intake needs by creating a family assistance team. [21].

This research aligns with other research findings that showed the local culture-based empowerment has a positive impact on increasing the community's knowledge and awareness of health issues. For example, research by Popay (2010) showed that the community empowerment programs such as Healthier Fleetwood in the UK successfully increased the community's health and well-being awareness through the involvement of traditional

leaders, communities and collaboration with local services directly accelerated changes in family behavior in managing children's health [22].

This research is in line with the evaluation of behavioral change communication strategies in accelerating stunting prevention conducted by the Ministry of Health Republic Indonesia (2019) [23]. It is stated that behavior problems and practices related to stunting were divided into individual levels, community levels, community service institution levels and policy levels which are still obstacles in realizing the stunting program that is implemented because only a small number of gravida, mothers of toddlers understand the negative impacts of "dwarf/ stunting" as well as the lack of father involvement during pregnancy. Lack of information provided by health workers to the target, home visit counseling program is not run well due to the lack of health workers [24].

The Effect of Local value Based Stunting Prevention Behavior towards Attitude Changes on the Families at Risk of Stunting

The changes of attitudes in this research clearly indicate that local value-based interventions have a very significant and strong effect in improving the family's attitudes at risk of stunting towards stunting prevention behaviors. It can be seen from the comparison of results between intervention and the control group. This finding is in line with research by Raman et al. (2024). He states that a health approach that integrates local wisdom, cultural values, and traditions that are already believed by the community is proven to be more easily accepted, understood, and adopted as part of daily life [25].

Interventions are not seen as something unfamiliar and patronizing, but rather as a reinforcement of values that already exist in the community. For example, by using folklore, local proverbs, or involving traditional leaders and community health volunteers who understand the local culture in conveying nutrition and health messages [26]. Local wisdom has great potential in handling stunting through nutritional knowledge, sustainable agricultural practices, and women's empowerment. Interventions that consider about local wisdom and involve the community in designing programs improve the stunting prevention status [27].

One of researches that relevant with these findings is a research by Ikpeama et al. (2024). It proved that local culture based intervention by involving traditional leader is able to improve mother's knowledge **and attitudes about** breastfeeding and complementary feeding, although they do not directly influence feeding behavior, and local culture can shape community attitudes to be more positive towards health [28]. In his research, a local culture approach implemented through community and traditional leaders has been proven successful in effecting family attitudes to support health practices, including maintaining child nutrition [29]. This research supports that culture-based empowerment can encourage positive attitudes and better acceptance from the community. So that the attitude changes can be transferred into more concrete actions in daily life [30].

The Effect of Local value Based Stunting Prevention Behavior towards Knowledge Changes on the Families at Risk of Stunting

Interventions based on local values are very important in the context of stunting prevention because the cultural values that attached in families play a major role in shaping daily behavior, especially in terms of parenting patterns and providing nutrition to children [31]. The result of research showed the significant changes in behavior of families at risk of stunting after receiving local value-based interventions. This approach utilizes the local values as a basis for motivation and strengthening behavior change, which finally give an impact on real actions in nurturing and preventing stunting [32]. Related research from Asrina et al. (2018) confirms that family empowerment based on local values can increase the effectiveness of public health programs because culturally adapted interventions are more easily accepted and internalized by families, thus accelerating changes in actions related to stunting prevention [33]. This is reinforced by other studies which found that interventions that consider to local wisdom in feeding practices and childcare patterns contribute significantly to reduce the risk of stunting in areas with high prevalence. Besides that, the research by Forh et al. (2022) showed that health education interventions which integrating local values directly affected family behavior change and increased compliance towards nutrition recommendations and children health. This study found that the understanding and respecting to local culture strengthens families' motivation to adopt stunting prevention consistently. The results of this research reinforce the importance of local value-based interventions as effective strategy in encouraging family behavior changes at risk of stunting [34]. Local values as part of family identity become an important tool in forming sustainable preventive behavior, so it is highly recommended to widely applied for stunting prevention program in Pesawaran regency and similar areas. [35]

The results of study showed that the intervention in the group which receive Family Centered Nursing (FCN) treatment significantly increased knowledge, attitudes, and actions related to stunting prevention compared to the control group. It can be seen from the higher mean rank value of the intervention group for the three variables with a very small significance value ($p < 0.001$), indicating that there is a significant positive change due to the FCN approach. This finding is consistent with previous studies that demonstrate the effectiveness of FCN-based

interventions in supporting families as the primary unit in stunting prevention. A study by Januarti et al. (2020) showed that the family empowerment model through FCN could improve families' ability to prevent stunting, including fulfilling nutritional needs and monitoring child's growth, which has been proven statistically have a significant impact on reducing the risk of stunting. Furthermore, the FCN intervention that integrates health education with cultural approach and continuity of care from the health workers, has been proven increase family's health literacy and child growth monitoring compliance by up to 68.5%, which directly reduces stunting prevalence by 17.5% in the intervention group. Significant changes in attitudes also become one of key factors that enables changes in preventive behavior, as explained in the behavior change framework of related studies [36].

The community of nurses play a crucial role in implementing FCN by providing nutrition education, regular home visiting, and empowering families through mentoring focused on their needs. This strategy strengthens the trusting relationship between nurses and families, thereby increasing the effectiveness of stunting prevention comprehensively. It is consistent with research by Januarti et al. (2020) which found that FCN-based supportive educational interventions (Supportive Educative Family-Centered Care) were effective in increasing mothers' knowledge and skills in providing proper nutrition for stunting prevention in children aged 2-5 years (12). Overall, the FCN approach gave positive results in increasing family capacity to prevent stunting sustainably through the improvement of knowledge, attitudes, and actions that can be measured statistically. With a significant Mann-Whitney U test value, it can be concluded that providing FCN-based interventions gave a real and significant impact in reducing the risk of stunting at the family level [37-39]

CONCLUSION

Based on the research results, it was found that stunting prevention behaviors based on local values gave a significant effect on the improvement of family's knowledge, attitudes, and actions who risk of stunting. A comparative analysis between the intervention and control groups showed that the intervention group had better improvements in all of three aspects, with a significance value of $p = 0.000$. It proves that the Family Centered Nursing approach that integrates local values is able to encourage positive changes in stunting prevention efforts. Based on these findings, it is recommended that stunting prevention programs adopt a family-based approach with a broader integration of local values, involves family members in nutrition education, parenting patterns, and daily health practices. Moreover, continuing professional development for health workers and local facilitators are needed to ensure the implementation of intervention will be effective and sustainable.

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